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-----Original Message-----
From: Gupta, Anish
Sent: Wednesday, September 18, 2002 4:10 PM
To: Gupta, Anish; STIC-Biotech/ChemLib
Subject: RE:

please forward me the following reference:

L31 ANSWER 19 OF 22 CAPLUS COPYRIGHT 2002 ACS
AN 2000:47412 CAPLUS
DN 133:9049
TI Vectorial effects on tissue reaction of electrically polarized hydroxylapatite ceramics
AU Kobayashi, Takayuki; Ohgaki, Masataka; Nakamura, Satoshi; Yamasita, Kimihiro
CS Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, 101-0062, Japan
SO Bioceramics, Proceedings of the International Symposium on Ceramics in Medicine (1999), 12, 291-294

Anish Gupta
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D 2610064

L16 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2003 ACS
AN 1995:867918 CAPLUS
DN 123:265701
TI Preparation of purified, softened, activated and polarized water and its application
IN Chen, Chonggao; Gu, Zongyi
PA Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 14 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1091113	A	19940824	CN 1993-112347	19930217
PRAI	CN 1993-112347		19930217		

AB The acidic (pH <6), alk. (pH >8) and/or neutral (pH = 6-8) water has a hardness <100 mg/L with harmful impurities, e.g., heavy metal ions and org. carcinogen being removed while useful substances, e.g., Fe, Ca, Mn, Zn, Mg, being kept in a suitable concn. The water is prepd. by electrochem. treating a raw water in an app., sepd. by a permeable membrane into a cathode chamber and an anode chamber, by applying a **voltage** across the electrodes, in the resp. chambers, to ppt. heavy metals, **bacteria**, **virus**, org. compds., and colloidal particles and to produce alk. water in the neg. electrode chamber and to remove Cl-, F-, CN-, SO42-, and CO32- and to produce acidic water in the pos. electrode chamber. The neutral water is obtained by mixing the acidic and alk. waters. The membrane is preferably microporous **ceramic**, glass, or plastic membrane and the electrodes are graphite. The treated water is useful for beverage and cosmetic manuf.

4 ANSWER 40 OF 48 CAPLUS COPYRIGHT 2003 ACS
AN 1983:140429 CAPLUS
DN 98:140429
TI Effect of adsorbed protein on hydroxyapatite zeta potential and Streptococcus mutans adherence
AU Reynolds, Eric C.; Wong, Albert
CS Dep. Conservative Dent., Univ. Melbourne, Melbourne, 3000, Australia
SO Infection and Immunity (1983), 39(3), 1285-90
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB The adherence of S. mutans PK1 to **hydroxyapatite** disks pretreated with various acidic and basic proteins in imidazole buffer was studied. Adsorption of a basic protein onto a **hydroxyapatite** disk enhanced or had no effect on **bacterial** adherence, whereas adsorption of an acidic protein reduced adherence. The effect of adsorbed protein on **bacterial** adherence was of both short and long range. The long-range effect of the acidic proteins in reducing the no. of **bacterial** adhering to **hydroxyapatite** was related to protein adsorption causing an increase in surface net neg. **charge**, as shown by zeta potential measurement. Basic protein produced a net pos. surface **charge** which facilitated adherence. Within the acidic protein group, the acidic residue percentage of the adsorbed protein was neg. correlated with the no. of **bacteria** adhering, whereas the nonpolar residue percentage was pos. correlated with **bacterial** adherence. Within the basic protein group, the basic residue percentage was correlated with the no. of cells adhering. These results indicate the involvement of short-range hydrophobic and ionic interactions in **bacterial** adherence to protein-coated **hydroxyapatite**.

L14 ANSWER 23 OF 48 CAPLUS COPYRIGHT 2003 ACS
AN 1995:949589 CAPLUS
DN 124:37636
TI Modified pellicle formation and reduced in vitro bacterial adherence after surface treatment with different siloxane polymers
AU Olsson, Jan; Carlen, Anette; Burns, Norman L.; Holmberg, Krister
CS Department of Cariology, Faculty of Odontology, Goeteborg University, Medicinaregatan 12, Goteborg, 413 90, Swed.
SO Colloids and Surfaces, B: Biointerfaces (1995), 5(3/4), 161-9
CODEN: CSBBEQ; ISSN: 0927-7765
PB Elsevier
DT Journal
LA English
AB The formation of a salivary pellicle is a prerequisite of **bacterial** colonization on the tooth, and the aim of this study has been to further the understanding of the role of surface properties in the formation of the salivary pellicle and subsequent adhesion of oral **bacteria**. Surface modification as a means of interfering with pellicle and plaque formation has been investigated. Five different silicone-contg. compds. were used for the surface treatments: polydimethylsiloxane contg. aminoalkyl groups (I), polydimethylsiloxane contg. partially neutralized aminoalkyl groups (II), Et silicate (III), potassium Me siliconate (IV) and sodium silicate (V). Studies of water wetting, surface **charge**, oral **bacterial** adherence and pellicle formation were performed on glass slides and **hydroxyapatite** beads coated by the test compds. No correlation was found between contact angle and surface **charge**, and evidently hydrophobicity, as expressed by water wetting, is not necessarily an indication of a low surface concn. of polar groups. All compds. reduced **bacterial** adherence after saliva contact, compd. IV by around 90%. Different patterns were seen in the adsorption of pellicle proteins on the different polysiloxanes.

=> d all

L26 ANSWER 1 OF 1 MEDLINE
AN **92212356** MEDLINE
DN 92212356 PubMed ID: 2134784
TI Experimental study on the application of direct current to the intra-osseous implant.
AU Moriya M; Tanaka H
CS Department of Removable Prosthodontics, School of Dentistry, Iwate Medical University.
SO NIPPON HOTETSU SHIKA GAKKAI ZASSHI, (1990 Apr) 34 (2) 309-17.
Journal code: 7505724. ISSN: 0389-5386.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA Japanese
FS Dental Journals
EM 199205
ED Entered STN: 19920515
Last Updated on STN: 19980206
Entered Medline: 19920507
AB The purpose of this study is to investigate the effect of the direct current electrical stimulation on surrounding tissue of the intra-osseous implant. The implant was composed of a peripheral hydroxyapatite layer and a central metal which was used as electrodes, and applied 10 microA constant direct current. They were implanted in femurs of four guinea pigs. These results were as follows: 1. When the bone marrow is stimulated electrically with 10 microA direct current for 28 days, large amount of bone formation around the implant was seen in wide area. 2. There was a different reaction surrounding tissue between cathode and anode. Around the cathode, bone formation on the surface of the implant was recognized remarkably. Around the anode, little amount of bone formation on the surface of the implant was recognized. 3. The electrical stimulation, with newly developed power unit and electrode, accelerated new bone formation.
CT Check Tags: Animal
*Electric Stimulation
English Abstract
Femur
Guinea Pigs
Hydroxyapatites
*Osteogenesis
*Prostheses and Implants
Wound Healing
CN 0 (Hydroxyapatites)

L29 ANSWER 1 OF 5 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 2002:397012 SCISEARCH
GA The Genuine Article (R) Number: 548BE
TI Manipulation of bacterial adhesion and proliferation by surface charges of electrically polarized hydroxyapatite
AU Ueshima M; Tanaka S; Nakamura S; Yamashita K (Reprint)
CS Tokyo Med & Dent Univ, Inst Biomat & Bioengn, Div Inorgan Mat, Chiyoda Ku, 2-3-10 Kanda Surugadai, Tokyo 1010062, Japan (Reprint); Tokyo Med & Dent Univ, Inst Biomat & Bioengn, Div Inorgan Mat, Chiyoda Ku, Tokyo 1010062, Japan; Shonan Inst Technol, Dept Mat Sci & Ceram Technol, Fujisawa, Kanagawa 2518511, Japan
CYA Japan
SO JOURNAL OF BIOMEDICAL MATERIALS RESEARCH, (15 JUN 2002) Vol. 60, No. 4, pp. 578-584.
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012 USA.
ISSN: 0021-9304.
DT Article; Journal
LA English
REC Reference Count: 19
AB The manipulation of bacterial adhesion and proliferation by surface charges built onto the surfaces of electrically polarized bioceramic hydroxyapatite (HAp) was investigated, The gram-positive bacteria Staphylococcus aureus (S. aureus) and the gram-negative bacteria Escherichia coli (E. coli) were cultivated on negatively charged, positively charged, and noncharged HAp surfaces (denoted as N-, P-, and 0-surface, respectively). The electrostatic force caused by the surface charges experimentally was proven to affect both adhesion and proliferation. Compared with the 0-surface of HAp ceramics over a 3-h cultivation, the population of adhered bacteria rapidly multiplied on the N-surface whereas it multiplied quite slowly on the P-surface. Compared with the 0-surface over a cultivation period of 12 to 72 h, the proliferation rate of the bacterial cell density per colony was accelerated on the N-surface and decelerated on the P-surface. The above results are attributed (1) to the electrostatic interaction between the cell surfaces and the charged surfaces of the polarized HAp, (2) to the stimulus of the electrostatic force for bacterial cells, and (3) to the concentration of the nutrient for the bacteria. (C) 2002 Wiley Periodicals, Inc.
CC ENGINEERING, BIOMEDICAL; MATERIALS SCIENCE, BIOMATERIALS
ST Author Keywords: **hydroxyapatite; electrical polarization; bacteria;** adhesion; proliferation; surface charges
STP KeyWords Plus (R): BACILLUS-SUBTILIS; GROWTH; METAL
RE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)
AN Y H	1998	43	338	J BIOMED MATER RES
BEVERIDGE T J	1989		1	BACTERIA NATURE
BEVERIDGE T J	1976	127	1502	J BACTERIOL
BEVERIDGE T J	1980	141	876	J BACTERIOL
FLETCHER M	1973	74	325	J GEN MICROBIOL
HOGT A H	1986	51	294	INFECT IMMUN
KOBAYASHI T	2001	57	477	J BIOMED MATER RES
KONHAUSER K O	1998	15	209	GEOMICROBIOL J
NAKAMURA S	2001	89	5386	J APPL PHYS
OHGAKI M	2001	57	366	J BIOMED MATER RES
TOPLEY W	1984	2	219	TOPLEY WILSONS PRINC
TOPLEY W	1984	2	289	TOPLEY WILSONS PRINC
TSIBOUKLIS J	1999	20	1229	BIOMATERIALS

UESHIMA M				IN PRESS SOLID STATE
UESHIMA M	2001	49	292	CLAY CLAY MINER
URRUTIA M M	1994	116	261	CHEM GEOL
URRUTIA M M	1993	75	1936	J BACTERIOL
URRUTIA M M	1995	65	149	GEODERMA
YAMASHITA K	1996	8	2697	CHEM MATER

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L16 ANSWER 26 OF 33 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 91242873 EMBASE
DN 1991242873
TI The effect of **electrical** stimulation on **bone** formation around **hydroxyapatite** implants placed on the rabbit mandible.
AU Lew D.; Marino A.
CS Department of Surgery, Louisiana State University, Medical Center, PO Box 33932,Shreveport, LA 71130, United States
SO Journal of Oral and Maxillofacial Surgery, (1991) 49/7 (735-739). ISSN: 0278-2391 CODEN: JOMSDA
CY United States
DT Journal; Article
FS 011 Otorhinolaryngology
034 Plastic Surgery
LA English
SL English
TI The effect of **electrical** stimulation on **bone** formation around **hydroxyapatite** implants placed on the rabbit mandible.
AB Nonresorbable, nonporous, particulate **hydroxyapatite** (HA) was implanted on the mandible in rabbits and stimulated electrically, 4 hours per day, during the first postoperative week. Stimulated and control implant sites were recovered 8 weeks postoperatively and examined histologically. The HA migrated into the mandible in the electrically treated specimens, and was routinely found in intimate association with preexisting mandibular **bone**. In the controls, the HA remained superior to the mandibular surface. In further studies (without **electrical** stimulation) in which the implant site was recovered 26 weeks postoperatively, HA was observed in the mandible; some HA particles migrated completely through the mandible and were found in the adjacent soft tissue. It was concluded that, under the conditions studied, **electrical** stimulation does not promote **bone** **growth** into HA, but rather produces the opposite result - it promotes more rapid movement of HA particles into the mandibular **bone**. The HA particle migration into the mandible observed (longer postoperative times) in the absence of **electrical** stimulation suggests that migration is a general property of HA particles when placed over **bone** under muscle.

L14 ANSWER 295 OF 305 CAPLUS COPYRIGHT 2002 ACS
AN 1991:639654 CAPLUS
DN 115:239654
TI Comparison of bone formation by ectopic implantation of apatite or alumina-bone marrow cell composites
AU Kurosawa, Hisashi; Shibuya, Kazuyuki; Iwano, Takahiko; Kawahara, Hajime
CS Fac. Med., Univ. Tokyo, Tokyo, 113, Japan
SO Mater. Sci. Monogr. (1991), 69(Ceram. Substitutive Reconstr. Surg.), 435-8
CODEN: MSMODP; ISSN: 0166-6010
DT Journal
LA English
AB In order to compare bone formation by ectopic graft of bone marrow **cells** (BMC) with **hydroxyapatite** (HA) and alumina (Al), expts. on rabbits up to 8 wk were performed. BMC was obtained from adult rabbit's tibia and composites with BMC with porous HA or Al column were implanted into the back muscle of 24 rabbits. The ceramics columns were harvested 4 and 8 wk after implantation. Bone formation was obsd. in 25-38% of the implanted **ceramic** columns and no significant difference was found between HA and Al in terms of scaffold for bone formation.

L14 ANSWER 292 OF 305 CAPLUS COPYRIGHT 2002 ACS
AN 1992:414362 CAPLUS
DN 117:14362
TI Effects of porous ceramic hydroxyapatite on bone formation induced by bone marrow and periosteum
AU Yazaki, Atsushi
CS Sch. Med., Keio Univ., Tokyo, 160, Japan
SO Shika Gakuho (1992), 92(2), 275-93
CODEN: SHGKA3; ISSN: 0037-3710
DT Journal
LA Japanese
AB The effect of porous **ceramic hydroxyapatite** (PC.cntdot.HAP) on bone formation induced by bone marrow or periosteum were examd. using diffusion chamber (DCs) which minimize no. of factors that could influence osteogenesis in rabbits. The following materials: bone marrow (BM) periosteum (PS), 3) BM + PC.cntdot.HAP, and PS + PC.cntdot.HAP were placed in DCs. The DCs were implanted into the peritoneal cavities of rabbits and removed 1, 2, 4, and 8 wk after the transplantation. Cartilage or bone formation were obsd. in all groups. Formation of bone and cartilage was time-dependently increased in BM and PS groups. In the BM + PC.cntdot.HAP group, cartilage and bone were formed at a much earlier stage and the formation reached the max. at 2 wk but decreased thereafter, suggesting absorption of the formed tissue by hematopoietic **cells**. In the PS + PC.cntdot.HAP group, bone formation time-dependently increased with a max. at 8 wk. Thus, PC.cntdot.HAP stimulates formation of cartilage or bone induced by the PS.

L14 ANSWER 274 OF 305 CAPLUS COPYRIGHT 2002 ACS
AN 1996:56534 CAPLUS
DN 124:95448
TI Bactericidal, far-infrared-radiating porous ceramics, and their manufacture
IN Inoe, Akira
PA Narumi China Corp, Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07291758	A2	19951107	JP 1994-110314	19940425

AB The porous ceramics consist of **ceramic** material, **bactericidal** ceramics, and far-IR-radiating substances. The **ceramic** materials may contain Al2O3, SiO2, mullite and/or cordierite, the **bactericidal** ceramics may be Ag-loaded Ca phosphate and feldspar, and the far-IR-radiating substances are selected from .gtoreq.1 transition metal oxides, e.g., the oxide of Cr, Mn, Fe, Co, and Ni. The Ca phosphate is selected from .gtoreq.1 of Ca3(PO4)2, Ca2P2O7 and **hydroxyapatite**, and the feldspar is selected from .gtoreq.1 of K feldspar, Na feldspar, anorthite, Li feldspar, Ba feldspar, and Sr feldspar. The pores may b formed by reaction of Ca(OH)2 or NaOH with powd. Al. The porous ceramics are manufd. by molding a wet mixt. contg. the **ceramic** materials, the antibacterial ceramics, and the far-IR-radiating substances, and firing the greenware. The **bactericidal**, **fungicidal** porous ceramics have high strength and staining resistance.

AN 92212356 MEDLINE
DN 92212356 PubMed ID: 2134784
TI Experimental study on the application of direct current to the intra-osseous implant.
AU Moriya M; Tanaka H
CS Department of Removable Prosthodontics, School of Dentistry, Iwate Medical University.
SO NIPPON HOTETSU SHIKA GAKKAI ZASSHI, (1990 Apr) 34 (2) 309-17.
Journal code: 7505724. ISSN: 0389-5386.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA Japanese
FS Dental Journals
EM 199205
ED Entered STN: 19920515
Last Updated on STN: 19980206
Entered Medline: 19920507
AB The purpose of this study is to investigate the effect of the direct current **electrical** stimulation on surrounding tissue of the intra-osseous implant. The implant was composed of a peripheral **hydroxyapatite** layer and a central metal which was used as electrodes, and applied 10 microA constant direct current. They were implanted in femurs of four guinea pigs. These results were as follows: 1. When the **bone** marrow is stimulated electrically with 10 microA direct current for 28 days, large amount of **bone** formation around the implant was seen in wide area. 2. There was a different reaction surrounding tissue between cathode and anode. Around the cathode, **bone** formation on the surface of the implant was recognized remarkably. Around the anode, little amount of **bone** formation on the surface of the implant was recognized. 3. The **electrical** stimulation, with newly developed power unit and electrode, accelerated new **bone** formation.